



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

cupreous in the opercula. The spinous dorsal is dark green in front of each spine, but light behind as well as above and below; the margin is also very dark. The ventral fins have each a broad blackish terminal band. The base of the caudal fin is punctulated with dark spots.

The specimens  $1\frac{3}{4}$ — $2\frac{1}{3}$  inches long.

RHAMPHOBERYX LEUCOPUS Gill.

This species is very closely related to the preceding and has almost precisely the same proportions, but the snout is perceptibly less produced, and the spinous dorsal and ventral fins almost immaculate, the former having only a linear darker border, and the ventrals sometimes tipped with darker.

D. X. I. 14. A. IV. 12.

3  
Scales 34—35—  
7

Cape St. Lucas, (2 specimens.)

Family ECHENEIDOIDÆ.

Genus REMORA (A. Dum.) Gill.

The *Echeneis osteochir* of Cuvier and the *E. brachypterus* of Lowe should both be removed from this genus and accepted as the types of as many distinct ones. The *E. osteochir* is distinguished by the rhombic form of the pectoral fins and the ossification of the rays. I have therefore named the specimens in the Smithsonian Institution *Rhombochirus osteochir*. The *E. brachypterus* is distinguished by the shorter anal fin and angular upper jaw. It may be called *Remoropsis brachypterus*.

REMORA JACOBCEA Gill.

*Echeneis remora* Günther, Catalogue of the Acanthopterygian Fishes, &c., Vol. ii. p. 378.

A specimen of *Remora* obtained by Mr. Xantus at Cape St. Lucas is provisionally referred, as by Dr. Günther, to the old *Echeneis remora* of Linnæus.

Descriptions of some new species of PEDICULATI, and on the classification of the group.

BY THEODORE GILL.

The group called by Cuvier *Acanthoptérygiens a pectorales pédiculés* and estimated as a family, is a very natural one, distinguished by the incomplete ossification of the skeleton, the prolongation of the carpal bones to form "pedicles" for the pectoral fins, and, finally, by the abnormal position of the very small branchial apertures. While these characters are not sufficient to entitle the group to ordinal distinction, they seem to be of much more than family value; it may be called a suborder, for which the name *Pediculati* may be retained. The genus *Batrachus*, referred to the *Pediculati* by Cuvier, has really little affinity to the true representatives of the group, and has been, by general consent, separated from them by all the more modern systematists.

In the suborder, four very distinct types distinguished by difference of form and structure are comprised. Those types must therefore be regarded as representative of as many families. Dr. Bleeker has attempted to distribute the several genera among families, which have not been characterized, but which were evidently separated on account of superficial differences of form. This is apparent on an examination of his system.

Phalanx 1, Herpetoichthyes seu *Pediculati*, Cuv.

Ordo 15, Antennarii.

[Mar.

Familia 41, Cheironecteoidei = Chironectidæ *Swns.*

Gen. Antennarius *Comm.* Brachionichthys *Blkr.*, Chaunax *Lowe*, Ceratias *Kroyer.*

Familia 42, Malthæoidei.

Gen. Malthæa *Cuv.*

Familia 43, Lophioidei = Lofidi *Raf.*

Gen. Lophius *L.*, Halieutæa *Val.*

The following synopsis is an expression of my views of the relations of the various members of the suborder.

- I. Branchial apertures above in the axillæ of the pectoral fins. Mouth subterminal or inferior, the lower jaw being received within the upper..... MALTHÆOIDÆ.
- II. Branchial apertures below, in or behind the inferior axillæ of the pectoral fins. Lower jaw projecting beyond or closing in front of upper.
  1. Head very large and flattened. Mouth transverse horizontal. Pyloric cæca..... LOPHIOIDÆ.
  2. Head compressed or cuboid. Mouth vertical or very oblique. Pyloric cæca none. Dorsal fin oblong. Ventrals developed..... ANTENNARIOIDÆ.
  2. Head compressed. Mouth with cleft subvertical. Pyloric cæca two. Dorsal fin very short, like anal. Ventrals obsolete..... CERATIOIDÆ.

The following is an enumeration and synopsis of the representatives of the several families. As Dr. Bleeker was the first to name one of the families, I have credited it to him, although he neither defined it nor restricted it in the same manner as is here done. As it is, however, only necessary that the type which the author considered as the representative of any group should be known in order to necessitate the retention of a name, Bleeker's must be retained. The generic name of *Perca*, for example, is credited to Linnæus, but, under that name, representatives of different families were confounded by the author, and the name is now accepted in an entirely different sense. The *name* alone is adopted, and not the idea or definition connected with it by Linnæus.

Family *MALTHÆOIDÆ* (Blkr.) Gill.

- I. Disk cordiform, produced from the snout; body robust..... MALTHEINÆ.  
Malthe.
- II. Disk orbicular, obtuse in front; body slender..... HALIEUTÆINÆ.  
1. Mouth small. Rostral tentacle obsolete..... Halieutichthys.  
2. Mouth large. Rostral tentacle developed..... Halieutæa

Subfamily *MALTHEINÆ* Gill.

Genus *MALTHE* Cuv.

Temperate and Tropical Eastern America.

Subfamily *HALIEUTÆINÆ* Gill.

Genus *HALIEUTICHTHYS* Poey.

Caribbean Sea, representing *Halieutæa*.

Genus *HALIEUTÆA* Val.

*Astrocanthus Swainson*, ii. 331  
Eastern Asia.

Family *LOPHIOIDÆ* (Raf.) Gill.

Genus *LOPHIUS* (Linn.) Cuv.

Family *ANTENNARIOIDÆ* Gill.Chironecteoidei *pt. Blkr.*

As Dr. Bleeker's family appellation is a modification of a generic name that cannot be retained for a representative of this family, it having been previously taken for a valid genus of Marsupial mammals, I do not deem it advisable to retain it.

- I. Head cuboid. A rostral spine or tentacle only developed..... *CHAUNACINÆ*.  
Chaunax.
- II. Head much compressed. The rostral spine or tentacle as well as two other robust spines developed..... *ANTENNARIINÆ*.
1. Second spine not connected with third. Body short with tumid abdomen. Palate armed with teeth.  
\* First and second spines disconnected.  
     $\alpha$ . D. 12. A. 7. Body smooth or scarcely granular. Mouth small. Wrist and pectoral slender. Ventrals elongated. Anal extended downwards.. *Pterophryne*.  
     $\beta$ . C. 12. A. 7—8. Body with spines, generally forked. Mouth moderate. Wrist and pectoral widened. Ventrals short. Anal oblong..... *Antennarius*.  
     $\gamma$ . D. 15. A. 8. Body smooth..... *Histiophryne*.  
\*\* First and second spines connected..... *Saccarius*.
2. Second and third spines well connected by membrane, and forming a fin, but distinct from first. Body oblong. Palate unarmed..... *BRACHIONICHTHYINÆ*.  
Brachionichthys.

Subfamily *CHAUNACINÆ* Gill.Genus *CHAUNAX* Lowe.

## Maderia.

Subfamily *ANTENNARIINÆ* Gill.Genus *PTEROPHRYNE* Gill.Type *Cheironectes lævigatus Cuv.*Genus *ANTENNARIUS* Comm.*Cheironectes Cuv. nec Illiger.*Type *Antennarius princeps Comm.*Genus *HISTIOPHRYNE* Gill.Type *Cheironectes Bougainvillii Cuv.*Genus *SACCARIUS* Gthr.

## Coasts of New Zealand.

Subfamily *BRACHIONICHTHYINÆ* Gill.Genus *BRACHIONICHTHYS* Blkr.

## Coasts of Van Diemen's Land, &amp;c.

Family *CERATIOIDÆ* Gill.Genus *CERATIAS* Kroyer.Family *MALTHÆOIDÆ* (Blkr.) Gill.Genus *HALIEUTICHTHYS* Poey.

Disk suborbicular or ovate-orbicular, about as long as the rest of the body and caudal fin combined. Forehead with a transverse bony ridge, beneath which is a cavity destitute of a tentacle. Eyes dorsal, oblique, nearly equally

[Mar.

remote from each other and the edge of the disk. Mouth rather small, inferior, with the lower jaw nearly semi-circular.

Teeth fine, on the jaws and palate.

Dorsal fin nearly behind the disk, much higher than long, with about four rays. Anal behind the second dorsal, and also provided with about four rays. Caudal rather long and subtruncated. Pectoral fins on peduncles, which are attached to the body by the membrane.

This most interesting new generic type was discovered last year by Prof. Poey at the Island of Cuba. That gentleman has kindly sent the only specimen obtained to the Smithsonian Institution. He has recognized its generic distinction from *Halieutaea*, distinguishing it by the absence of a barbel in the frontal cavity and the dentition. It is still further distinguished from the Asiatic genus by the much smaller mouth, and also by the attachment of the carpal bones to the body.

*HALIEUTICHTHYS RETICULATUS* Poey.

The disk is longer than wide, and somewhat oval, being narrower before than behind. The ridges alone are covered with simple spines; five spines form a *pentagon* before the interorbital area; one over each orbit, and four are on a ridge proceeding backwards from the posterior angle of each orbit, which converges in a curve towards the opposite one; the last form the anterior angles of a *transverse pentagon on the nape*. A transverse ridge behind the eyes, which intersects the longitudinal ones, and has at the angles the second spines from the eyes, provided near each lateral end with another spine, and a swelling at the end itself. Five bicuspid spines arm each lateral margin of the disk, and between them are smaller simple ones.

D. 4. A. 4.

The color is gray, reticulated with blackish. The caudal is crossed by three blackish bands.

The principal proportions are exhibited in the following table :

Extreme length ( $1\frac{8}{12}$ ) 100.

Disk—Greatest length 51; greatest width 45.

Dorsal (*spinous*)—Distance from snout 56.

Anal—Distance from snout 60.

Caudal—Length 14.

Pectoral—Distance from snout at upper axilla 47; length 14.

Family *ANTENNARIOIDÆ* Gill.

Genus *ANTENNARIUS* Comm.

*ANTENNARIUS SANGUINEUS* Gill.

The anterior dorsal spine is very slender and enters  $2\frac{1}{2}$  times in the length of the caudal fin; it terminates in a flap extended on each side laciniated outwards. The second spine is rough, robust and curved strongly backwards at its end; the third is not free, but apparent as a hump pointed backwards, and extending two-thirds of the distance from its insertion to that of the dorsal fin. Skin covered with small bifid spines, whose prongs diverge considerably and are acute.

The color is blood-red, except on the abdomen, both with several more or less distinct black spots under the origin of the dorsal fin and on the sides. The abdomen is light or yellowish-brown, spotted with black. The intervals between the caudal and anal rays are also marked with black. The floor of the mouth behind the tongue has two lateral black bands converging towards the front, while the posterior margin of the tongue itself is also sometimes lined with black.

Two specimens were obtained at Cape St. Lucas by Mr. Xantus.

*ANTENNARIUS ANNULATUS* Gill.

The first dorsal spine is very slender, straight and nearly equals the length 1863.]

of the caudal fin; it terminates in two simple tentacles, while a third longer one arises from front near its end; the second spine is curved at the middle and extends to the base of the third; the membrane is slight; the third spine is curved at the middle and partly free, but attached by the skin and only partially erectile; it reaches more than half way to the dorsal fin. The skin is covered with bifid spines.

The body and fins are fawn-colored, lighter on the abdomen, with a few scattered ocellated dots, more abundant on the internal face of the pectoral fin as well as ventral; the abdomen has darker fawn spots. There are larger ocelli,—black, edged with white,—on the marginal half of the dorsal and anal fins, and on the caudal; on the latter, three larger ocelli form a triangle. A still larger ocellus is on the back at the base of the ninth dorsal ray, and another between the fourth and fifth anal rays. A pink spot exists at each corner of the mouth; the second dorsal spine and streaks on each side of its groove are colored likewise, and in front of the dorsal is a pink triangular saddle, sending from each anterior angle a fawn streak margined with whitish to a pinkish area before the pectoral, above which it merges in a marbled fawn area. A broad pink ring encircles the base of the caudal fin, which itself, as well as the posterior half of the dorsal and anal fin, have a submarginal pink band.

A single specimen was obtained by Lt. Wright, U. S. A., at Garden Key, Florida, and is in the collection of the Smithsonian Institution.

#### ANTENNARIUS PLEUROPHthalmus Gill.

The anterior dorsal equals about a third of the length of the caudal fin, and has at its end a lacinated or fringed lobe extending upwards; the second is moderate, slightly curved, and rather longer than the first, and with a membrane extending nearly to the base of the third spine; the latter is free, extends backward nearly to the fin, and almost connected with it by the membrane. The skin is covered with minute bifurcated spines.

The color is brown, marbled with lighter, especially before and behind the dorsals, and above the pectorals; distant black dots are also scattered over the body. Three large ocelli or black spots, margined with light-brown, are on each side; one at the middle of the basal half of the dorsal; a second below, intermediate between it and the anus, and a third in the middle of the caudal fin. The floor of the mouth behind the tongue is black, with whitish-yellow radiating lines, while the tongue itself is light-brown, with darker radiating bands or spots.

A single specimen of this species is in the collection of the Smithsonian Institution, and was probably obtained at Key West.

#### ANTENNARIUS STRIGATUS Gill.

The anterior dorsal spine is very slender and filiform, without appendages; the second is straight and moderate; the third concealed and only developed as a hump, obtuse behind. The spines which cover the body are small and mostly bifid.

The back and front of the dorsal fin are reddish; the rest light-brown, with black stripes which diverge downwards above the pectorals, those in front being parallel with the profile, and at right angles with those behind. Around the pectoral fins and on the flanks, the streaks are generally blended to form a continuous black area. A black dorsal saddle is in front of the dorsal fin, and a black band covers the posterior half of the caudal fin. The abdomen is broadly reticulated with black, and the brown intervals themselves are frequently striated with the same color. The interior of the mouth is immaculate.

Cape St. Lucas, (J. Xantus.) Two specimens.

[Mar.